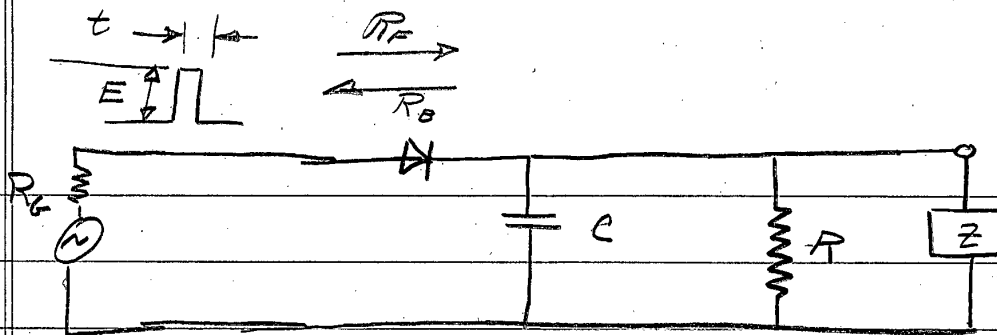


Pulse stretcher before
audio amplifier

ACS

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This document is part of an integrated
file. If separated from the file it must be
subjected to individual systematic review.



Say $t \approx 1 \mu\text{sec}$

then $(R_F + R_G)C$ must be less than $1 \mu\text{sec}$

$$\text{i.e. } (R_F + R_G)C \ll t$$

$$\text{also } RC > t$$

$$\text{perhaps } \left. \begin{aligned} (R_F + R_G)C &= \frac{1}{4} t \\ RC &= 1000 t \end{aligned} \right\} t = 1 \mu\text{sec}$$

$$\text{then } R = 4000 R_F$$

for a generator with low internal impedance. If the generator impedance is R_G

$$\text{then } R = 4000 (R_F + R_G)$$

for the 1N54-A crystal

$$R_F \approx 200 \Omega$$

$$R_G \approx 1.4 \text{ meg.}$$

at low levels a video crystal impedance may be several thousand ohms.

$$\text{Say } R_G \approx 2000 \Omega$$

$$\text{then } C \approx \frac{1}{4} \cdot \frac{1}{2000} \times 10^{-6}$$

$$\text{or } C \approx 10^{-10} = 100 \mu\mu\text{f}$$

thus the required ^{load} ~~source~~ impedance (Z) may be several megohms

If a transformer is used and the frequency is considered to be $\frac{1}{2}$ mc.

$$Z = \omega L = \overset{\text{say}}{5} \text{ meg } \Omega$$

$$L \approx 10 \text{ henries}$$

but one would like the impedance to be high for the frequencies involved in the stretched pulse say 500 cps

$$\text{then } L \approx 10,000 \text{ henries}$$

in this case the natural frequency of the LC circuit ($\omega_0 = \frac{1}{\sqrt{LC}}$) would be 1000 cps